

In the Claims

1. (Canceled)

2. (Previously amended) The system of claim 14,  
wherein:

the LUT in which said dual-slope output conversion includes a zero-to-middle part with a single gain greater than one, and a middle-to-full-scale part with a single gain less than one, and such that a knee-point joins them.

3. (Previously amended) The system of claim 14,  
wherein:

the LUT in which said dual-slope output conversion includes a zero-to-middle part with a single gain less than one, and a middle-to-full-scale part with a single gain greater than one, and such that a knee-point joins them.

4. (Canceled)

5. (Previously amended) The system of claim 13,  
wherein:

the LUT is programmable and downloadable.

6. (Canceled)

7. (Canceled)

- 8. (Canceled)
- 9. (Canceled)
- 10. (Canceled)
- 11. (Canceled)

12. (Previously amended) The system of claim 13,  
wherein:

the LUT in which a multi-slope output conversion  
for each digital transfer function includes at least two  
knee-points that join three different linear digital gains.

13. (Currently amended) A video system, comprising:

an imaging device for providing a signal video  
output and having a light-exposure-to-analog conversion  
dynamic range characteristic;

an analog-to-digital converter (ADC) having an  
analog-to-digital conversion dynamic range characteristic,  
and connected to receive said signal video output that  
matches its range with said light-exposure-to-analog  
conversion dynamic range characteristic of the imaging  
device, wherein the full analog dynamic range of the imaging  
device makes use of the full digital output word range of  
the ADC;

a look-up table (LUT) connected to convert digital  
video output words of the ADC, wherein each sequentially

presented digital word represents corresponding pixels in an image frame, and each is converted according to a dynamically selectable one of a plurality of digital transfer functions; and

a program controller connected to the LUT and providing for the dynamic selection of particular ones of said plurality of digital transfer functions in the LUT ~~according~~ which are differently applied to respective portions of said image frame that include a subject-of-interest being imaged.

14. (Previously Added) The system of Claim 13, wherein:

the imaging device includes a charge-coupled device (CCD); and

said plurality of digital transfer functions in the LUT each provide for a different dual-slope output conversion in which a first linear digital gain is applied to a zero-to-middle part of said linear dynamic range of the CCD-imaging device, and a second linear digital gain is applied to a middle-to-full-scale part of said linear dynamic range of the CCD-imaging device.

15. (Previously Added) A method of video imaging comprising the steps of:

    matching the full analog output range of an imaging device to the full digital output range of an analog-to-digital converter (ADC);

    connecting said imaging device to said ADC without making any gamma corrections or non-linear enhancements so the digital output words proportionally correspond to the analog output of said imaging device;

    digitally translating said digital output words into a digital video output according to a look-up table (LUT) with a plurality of digital transfer functions; and

    dynamically selecting different ones of said digital transfer functions to be applied to different parts of a video frame to better render subjects-of-interest represented within.

16. (Previously Added) The method of Claim 15, further comprising:

    downloading and programming new ones of said plurality of digital transfer functions to be included in said LUT.